

Remarks/Arguments

Claim Summary

By this Amendment, claims 1-6 have been revised for clarity only. Except for the revisions to claims 2, 4 and 6 discussed below in connection with the rejection under 35 U.S.C. §112, second paragraph, the claim revisions are not being made for reasons of patentability or in response to a statutory rejection.

Claims 1-6 remain pending in the application.

Drawings

By this Amendment, FIG. 2 has been revised to overcome the Examiner's objections. In particular, the variable R_2 has been added. Since $2R_2$ is defined as the fitting diameter between the sleeve and the hub, it is clear that R_2 is a distance from a central axis to a contact surface between the sleeve and the hub in the radial direction. Therefore, the addition of R_2 in FIG. 2 is not a new matter. As for the other variables " t_1 " and " t_2 ", it is noted that claims 2, 4, and 6 have been revised to delete reference thereto, and thus these variables need not be illustrated in the drawings.

Specification

By this Amendment, the specification has been revised to correct the informalities identified by the Examiner.

35 U.S.C. §112, second paragraph

By this Amendment, dependent claims 2, 4 and 6 have been revised to delete reference to the variables t_1 and t_2 , thus overcoming that aspect of the Examiner's rejection under 35 U.S.C. §112, second paragraph.

Further, Applicants respectfully disagree with the Examiner's apparent contention that the variable R_2 is indefinite. One of ordinary skill would readily understand what is meant by the "fitting diameter between the sleeve and the hub" as recited in claims 2, 4 and 6. See, e.g., amended FIG. 2. Applicants thus respectfully

traverse this aspect of the Examiner's rejection under 35 U.S.C. §112, second paragraph.

35 U.S.C. §103

Claims 1-6 were rejected under 35 U.S.C. §103 as being unpatentable over Komura et al. (US 6771459) in view of Ishikawa et al. (US 2002/0186903) and Gomyo et al. (US 6834996). Applicants respectfully traverse this rejection and request reconsideration thereof.

The cited references, taken individually or in combination, do not teach or suggest at least the claimed relation of $\alpha_1 < \alpha_0 < \alpha_2$, where α_0 , α_1 and α_2 respectively denote linear expansion coefficients of the shaft, the sleeve and the hub.

As apparently acknowledged by the Examiner, Konuma et al. do not describe the linear expansion coefficients of the shaft, the sleeve and the hub.

In the meantime, Ishikawa et al. states that *"the spindle 14, the bearing member 15, and the thrust plates 21 and 23 are entirely formed of alumina ceramic. However, one or more or all of these components may also be formed of electrically conductive ceramic"* in paragraph [0066]. In addition, Ishikawa et al. mentions titanium carbide and alumina ceramic in paragraphs [0026] and [0027] thereof.

Finally, Gomyo et al. states that *"ferrite stainless steel hubs are used with glass disks"* in column 1, lines 61-62.

Each of the cited references merely describes the materials utilized to configure that motors thereof. None of the references describes the linear expansion coefficients of these materials.

Generally, the linear expansion coefficient of a given material may vary depending on factors such as the density and temperature of the material. This is especially the case where the material is fabricated by sintering. That is, for sintered materials such as disclosed in Ishikawa et al, the linear expansion coefficients are considered to vary greatly depending on the density of the material.

Thus, even though each of the cited references describes certain materials of the shaft, the sleeve and the hub, it does not follow that the cited combination of

references disclose the presently claimed relation of $\alpha_1 < \alpha_0 < \alpha_2$, where α_0 , α_1 and α_2 respectively denote linear expansion coefficients of the shaft, the sleeve and the hub.

For at least the reasons stated above, Applicants respectfully contend that claims 1-6 define over the prior art.

Conclusion

No other issues remaining, reconsideration and favorable action upon the claims 1-6 now pending in the application are requested.

Respectfully submitted,
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Attachment: Replacement Sheet (FIG. 2)

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